



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# Native American Renewable Energy Program Development

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Sandra Begay-Campbell  
Principal Member of the Technical Staff



# Sandia provides technical assistance to DOE EERE Tribal Lands Program



- Sandia provides technical assistance for the DOE Tribal Lands Program awardees.
  - FY04 will include continued support of an ecotourism development (CA-Ramona Band).
- Albuquerque's Southwestern Indian Polytechnic Institute (SIPI) designed & installed photovoltaic, wind and solar hot water systems to educate and train Native American students in renewable energy technology.
  - With the students' assistance, SIPI operates and maintains the systems.

**DOE's Office of Weatherization & Intergovernmental Affairs Program**

**[http://www.eere.energy.gov/power/tech\\_access/tribalenergy/](http://www.eere.energy.gov/power/tech_access/tribalenergy/)**



# **Sandia has an active relationship with the Navajo Nation authorized thru a Memorandum of Understanding (MOU)**



## **Navajo Nation demographics:**

- The reservation is 25,000 square miles in three states: New Mexico, Arizona, and Utah (17 million acres)
- Out of 250,000 enrolled members, 152,200 live on the reservation.
- The Navajo Tribal Utility Authority (NTUA) is a 30-year old rural cooperative and tribal enterprise serving the Navajo people.

**An estimated 18,000 occupied structures lack electric power & the average cost to extend the grid is about \$25,000 per mile.**



# Navajo Nation Solar Electrification Demonstration Project First Phase is complete



New NTUA Off-Grid Photovoltaic (PV)  
Hybrid Unit

Navajo Nation received \$3M FY03 funding with \$800k for PV hybrid units. Sandia support includes:

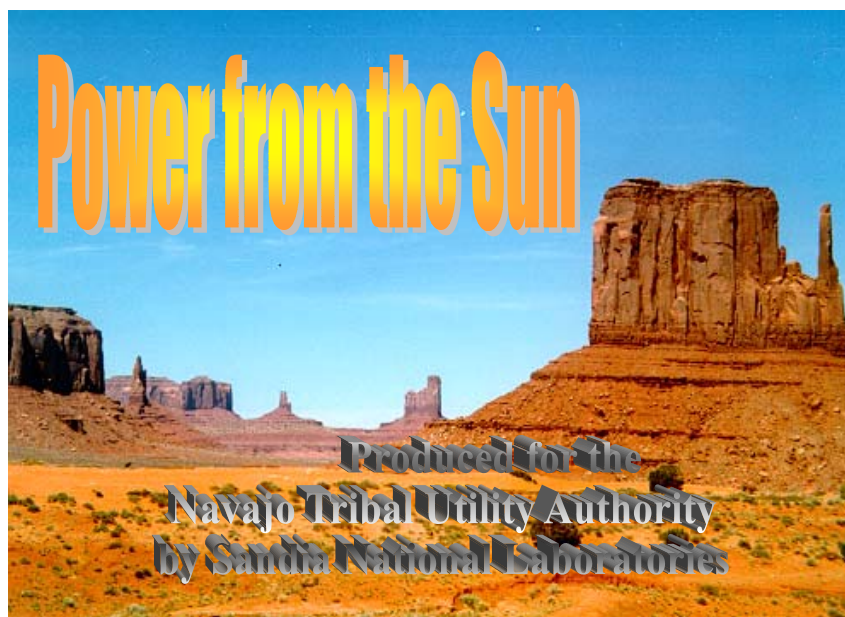
- Assistance with technical specifications and technical review
- Development of customer video assistance (storyboarding and technical producer interface)
- Offer to assist with acceptance testing & performance testing
- Offer to support maintenance process refinement and data acquisition.

**The Navajo Nation Electrification Demonstration Program (Public Law 106-511, Section 602) establishes assistance from DOE.**





## Sandia & NTUA created a customer education video to communicate PV system capabilities



It is important for end users to understand the systems' capabilities

- Limited electricity available from the PV systems.
- Power availability must be gauged and energy use can be managed.
- PV panels must be cleaned and no shadows on the panels.
- Report problems to District Offices to trouble shoot.

**The video is available in both English and Navajo for distribution to NTUA's district offices and Navajo community centers.**